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Docket No. 5034

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of: GAWLER

Serial No. 09/867,763

Filed: May 31, 2001

Title: MAIL PREPARATION SYSTEM

Group Art Unit: 2131

PRIORITY DOCUMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Transmitted herewith is a certified copy of European Application No. 0013152.4,
filed 01 June 2000, priority of which is hereby claimed under 35 U.S.C. §119.

Respectfully submitted,

Charles W. Fallow
Reg. No. 28,946

SHOEMAKER AND MATTARE, LTD.
2001 Jefferson Davis Highway - Suite 1203
Arlington, Virginia 22202
(703) 415-0810

August 27, 2001

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INVESTOR IN PEOPLE



The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

I also certify that the attached copy of the request for grant of a Patent (Form 1/77) bears an amendment, effected by this office, following a request by the applicant and agreed to by the Comptroller-General.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

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Dated

19th July 2001

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Cardiff Road
Newport
Gwent NP9 1RH

1. Your reference

13299/16697

2. Patent application number

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0013152.4

01 JUN 2000

3. Full name, address and postcode of the or of each applicant (underline all surnames)

NEOPOST LIMITED
South Street
Romford
Essex, RM1 2AR

Patents ADP number (if you know it) 117667002

If the applicant is a corporate body, give the country/state of its incorporation

United Kingdom

4. Title of the invention

USER INTERFACE FOR MAIL
PREPARATION SYSTEM

5. Name of your agent (if you have one)

HUGHES CLARK & CO

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

114/118 Southampton Row
London WC1B 5AA

KEITH BODEN
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THE OLD COLLEGE
53 HIGH STREET,
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Patents ADP number (if you know it)

877008 ✓

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number
(if you know it)

Date of filing
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
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8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

Yes

- a) any applicant named in part 3 is not an inventor, or
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Patents Form 1/77

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Translations of priority documents
Statement of inventorship and right to grant of a patent (Patents Form 7/77)
Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents
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11.

I/We request the grant of a patent on the basis of this application.

Signature *Hughes Clark & Co* Date
HUGHES CLARK & CO 31 May 2000

12. Name and daytime telephone number of person to contact in the United Kingdom

0171 404 5414

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USER INTERFACE FOR MAIL PREPARATION SYSTEM

This invention relates to mail preparation system for dispensing postage in respect of mail items and in particular to a user interface to enable operation of such
5 system by an operator.

In known postage dispensing apparatus, for example postage meters, the apparatus is provided with a display for display of information to a user and is provided with a
10 keyboard to enable the user to input postal data and to select operations required to be performed by the apparatus. The keyboard is provided with keys corresponding to different operations that the apparatus may be required to perform and is provided with a set of
15 numerical keys. When a postage dispensing operation is selected, the numerical keys each correspond to a different numerical value whereby a value of postage charge desired to be applied to a mail item is selected by operation of the appropriate key or keys.

20 According to a first aspect of the invention a mail preparation system including postal charge dispensing means operable to dispense postage charges, printing means operable to print postal indicia representing dispensed
25 postage charges on mail items and operator interface means including first means operable to display a depiction of a postal indicium to be printed on a mail item; the depicted postal indicium including data items that are modifiable by an operator of the system, said postal data items
30 including a postal charge data item; second means operable by an operator of the system to select one of said data items in the depiction of the postal indicium; third means operative in response to the selection of said one of the data items to display possible values of said selected
35 data item; fourth means operable by the operator to select one of said possible values; said first means being operative in response to selection of said one of the data

items and to selection of said one of possible values of the selected data item to display a depiction of a modified postal indicium in which the selected data item has the selected value and said first means being operable
 5 to input data corresponding to values of each of the data items in the depicted postal indicium to said postal charge dispensing means; and said postal charge dispensing means being operative to effect accounting in respect of the value of the postal charge data item and to generate a
 10 postal indicium based on the values of each of said data items to operate the printing means to print the postal indicium on a mail item.

According to a second aspect of the invention a mail
 15 preparation system includes first means operable to send first messages relating to a batch of mail to a remote data centre; second means to receive second messages corresponding respectively to each first message and acknowledging receipt of said first message corresponding
 20 thereto by said remote data centre; display means operative to display message areas corresponding respectively to each first message, said message areas having a first visual appearance in response to sending of a corresponding first message and having a second visual
 25 appearance in response to receipt of a second message acknowledging receipt of the corresponding first message.

An embodiment of the invention will now be described with reference to the drawings in which:-

- 30 Figure 1 is block diagram of a mail preparation system,
 Figure 2 illustrates a part of a mail item bearing an imprint of a postal indicium,
 Figure 3 illustrates a main operating display screen displayed to a user of the system,
 35 Figure 4 illustrates the main operating display screen of Figure 3 with a first drop-down menu superimposed thereon,

Figure 5 illustrates the main operating display screen of Figure 3 with a second drop-down menu superimposed thereon, and

Figure 6 illustrates a message status display screen.

5

Referring first to Figure 1 mail preparation system includes a postal secure device (PSD) 10 operable to carry out accounting in respect of dispensing of postage charges in relation to mail items. The PSD 10 includes electronic
10 accounting means comprising a micro-processor 11 operating under program routines stored in a read only memory (ROM) 12. A random access memory (RAM) 13 is provided for use as a working store for temporary storage of data during operation of the PSD. Non-volatile duplicated memories
15 14, 15 are provided for the storage of critical data relating to use of the PSD and in particular for storage of accounting data relating to dispensing of postage charges which is required to be retained even when the PSD is not powered. The microprocessor 11 carries out
20 accounting functions in relation to dispensing postage value in respect of amounts of postage charges applicable to handling of mail items by a postal authority or other carrier. The accounting data usually includes a value of credit, an accumulated total of value
25 dispensed by the PSD in respect of mail items, a count of the number of mail items processed by the PSD and a count of the number of mail items for which a postage charge in excess of a predetermined value has been dispensed. The value of credit may be a value of credit available for use
30 by the PSD and stored in a descending credit register. The accumulated total value is stored in an ascending tote register, the count of items is stored in a item count register and the count of items to which a postage charge in excess of a predetermined value is applied is
35 35 stored in a large items register. If desired, instead of a descending register storing a value of credit available for use by the PSD, a total value of credit

entered into the PSD may be stored in an ascending credit register.

As is well known in the postage meter art, each of the registers referred to hereinbefore for storing accounting data is replicated in order to enable integrity of the accounting data to be maintained even in the event of a fault or termination of power to the PSD during operation of the mail preparation system. Two replications of each of the registers are provided in each of the memory devices 14, 15. The components of the PSD are housed in a secure housing 16 to provide security against unauthorised tampering with the components of the PSD.

External communication with the micro-processor 11 of the PSD is effected by means of an input/output port 17 connected to the microprocessor.

Control of operation of the PSD is effected by means of a computer 18 or other controller communicating via the input/output port 17 of the PSD. The computer 18 may be a desk top computer including a microprocessor 19. A read only memory (ROM) 20 for storing program instructions, a working memory (RAM) 21 and at least one disk drive 22 are operationally connected to the microprocessor 19. The computer 18 includes an input/output port 23 connected to the microprocessor 19 which is utilised to communicate via the input/output port 17 with the microprocessor 11 of the PSD 10.

30

The computer 18 is provided with a display 24 for display of information to an operator of the mail preparation system, a keyboard 25 for the input of data and operating instructions by the operator of the mail preparation system and a screen pointing device 26 such as a mouse or tracker ball for use by the operator to select items displayed on the display 24. A printer 27 is operated

under control of the computer 18 to print postal indicia on mail items. The computer operates under a Windows operating system stored on the disk drive 22 and downloaded to the RAM 21 when required to be accessed by the microprocessor 19.

The computer 18 includes a database 50 which may be stored internally in the computer 18 or may be stored externally and the database 50 may be stored in one or more hard disk devices or in other non-volatile memory devices. The computer includes a communication port 51 for communication over a communication link 52 with a remote data centre 53 of a postal authority. The communication link 52 may be provided by a telephone data link and may utilise the Internet communication system.

A weighscale 54 may be connected to the microprocessor 19 of the computer 18 by means of a weighscale port 55 to provide signals indicative of weight of mail items to the microprocessor 19.

When it is desired to utilise the mail preparation system to dispense postage in respect of mail items and to print postal indicia on the mail items, the operator enters, by means of the keyboard or screen pointing device, a selection of a mail preparation program and instructions to run the program. The program may be stored on a hard disk of the disk drive 22 and when selected to be run, the program is loaded into the RAM 21 for access by the microprocessor 19 during running of the program. If desired the computer may be arranged to run the mail preparation program automatically upon power-up of the mail preparation system. Running of the mail preparation program, causes the microprocessor to operate the video display screen 24 to display a main operating screen as shown in Figure 3 to which reference will be made hereinafter.

Referring now to Figure 2, a postal indicia 30 to be printed on a mail item 31 is of a form authorised by the postal authority and includes a graphic design 32 incorporating a designation of the appropriate postal authority and postal data. In the example illustrated the postal authority is Royal Mail. The postal data includes postal data 33 supplied by the PSD 10 including an identification of the supplier of the PSD 10, an identification serial number of the PSD 10 and a unique identification in the form of a batch identification and an item number for a mail item. The postal data also includes postal data items of which the value may be selected by an operator of the mail preparation system, these selectable postal data items include class of mail 36, a date 37 of posting for the mail item and a postage charge 38 applied to the mail item. The values of these postal data items selected by the operator are input by the operator to the computer 18, as described hereinafter, and the computer inputs the values of these postal data items to the PSD 10. The PSD carries out accounting in respect of the value of the postal data item relating to postage charge and the PSD generates a postal indicium based upon and including the values of the postal data items and outputs the postal indicium to the computer 18. The computer then operates the printer 27 to print the postal indicium received from the PSD on the mail item.

The postal indicium generated by the PSD also includes cryptographic data, for example a digital signature or encryption of postal data, to enable authenticity of the printed postal indicium to be verified by a verification system operated by the postal authority. The cryptographic data is printed in machine readable 2D or datamatrix form in an area 35.

35

The cryptographic data included in the postal indicium is

generated by cryptographic means 39 provided in the PSD 10. The cryptographic data is generated from the postage data included in the postal indicium whereby the cryptographic data printed on the mail item may be
5 utilised to verify the postage data printed in the postal indicium printed on the mail item. The cryptographic means may include hardware separate from the micro-processor arranged to generate digital signatures or to encrypt information or may be implemented by the
10 microprocessor 11 operating under software routines to generate digital signatures or to encrypt information.

Returning now to Figure 3, the main operating screen includes a depiction 40 of the postal indicium that may be
15 printed on a mail item. As explained hereinbefore some of the postal data included in the postal indicium is selectable by an operator of the mail preparation system and the operator is required to input the selected postal data so that the PSD can generate a required postal
20 indicium to be printed on the mail item. If the postal data selectable by the operator depicted in the main operating screen is as desired by the operator, the operator accepts the depicted postal indicium and inputs an instruction to cause the PSD to carry out the
25 accounting procedure, to generate the depicted postal indicium and to output the generated postal indicium to the computer for operation of the printer to print the required postal indicium on a mail item. However if any selectable postal data item for a mail item is required to
30 be different from that depicted in the main operating screen the operator may select a different value for the postal data item for inclusion in the postal indicium as will now be described.

35 With the main operating screen displayed to the operator, the operator uses the screen pointing device 26 to select one of the postal data items in the depiction 40 that it

is desired to modify. For example if the postal data item 36 designating the desired class of mail is to be changed from '2nd Class' as depicted to for example '1st Class', the operator uses the screen pointing device to point to
5 '2nd Class' in the depiction of the postal indicium. Output from the screen pointing device 26 enables the mail preparation program running in the computer to recognise that the postal data item designating class of mail has been selected and the computer runs a sub-routine of the
10 mail preparation program to display a drop-down menu superimposed on the main operating screen, as shown in Figure 4, to provide options of '1st Class', '2nd Class', 'airmail', 'special delivery' and 'registered' for selection by the operator using the screen pointing
15 device. Upon selection of '1st Class', the computer, running the mail preparation program, substitutes '1st Class' in the postal data item 36 for inclusion in the postal indicium and in the depiction of the postal indicium in place of '2nd Class'. It will be understood
20 that the options for selection of class of mail referred to hereinbefore are given by way of example only and that options to select other classes of mail that are available may be provided and displayed in the drop down menu for selection by the operator. When a class of mail has been
25 selected, the postal data item 38 relating to postal charge is changed by the mail preparation program to a postal charge appropriate to the selected class of mail. Generally the postal data item 18 is changed to a minimum value of postage charge applicable to the selected class
30 of mail. However if desired the postal data item 18 may be changed to a value of postage charge above the minimum and, where the weighscale 54 is provided to input signals indicative of weight of a mail item, the mail preparation program is operative to select the postage charge
35 applicable in respect of the selected class of mail and applicable to the weight of the mail item as determined by the weighscale.

When a weighscale is not provided, the operator may select the postal data item 38 relating to postal charge to modify the postal charge by selection of a postal charge from a table of postal charges appropriate to the selected class of mail. Tables of postage charges for each class of mail are stored and the table of charges relating to the selected class of mail is displayed in a drop down menu when the operator selects the postal data item 38. Selection of the postal data item 38 relating to postal charge is effected by the operator using the pointing device to point to the postage charge data item 38 in the depiction of the postal indicium. If '1st Class' is depicted in the postal indicium depiction, selection of the postal charge item 38 causes the computer running the mail preparation program to display a drop-down menu 42 of postage charges in respect of 1st Class mail of different weights superimposed on the main operating screen as shown in Figure 5. For example the drop-down menu 42 may display 27p, 41p, 57p, 72p, 84p currently charged by Royal Mail for 1st Class mail items and maximum weights to which these postage charges respectively are applicable. Postage charges applicable in respect of higher weights may be displayed by scrolling down the drop down menu. However if '2nd Class' is depicted in the postal indicium depiction, selection of the postal charge item 38 causes the computer running the mail preparation program to display a drop-down menu of postage charges in respect of 2nd Class mail of different weights superimposed on the main operating screen. For example the drop-down menu may display 19p, 33p, 44p, 54p, 66p currently charged by Royal Mail for 2nd Class mail items and maximum weights to which these postage charges respectively are applicable. Similarly other drop down menus of postage charges are displayed in correspondence with other classes of mail that are selected. Selection of a required value of postage charge from the displayed drop-down menu is

effected by the operator using the pointing device to point to the required value of postage charge in the drop-down menu. The computer running the mail preparation program recognises the postage charge selected by the pointing device and modifies the value of the postage charge data item to the selected value of postage charge and causes the microprocessor to display the selected value of postage charge in the depiction of the postal indicium in the main operating screen.

10

In addition to selection of class of mail and selection of value of postage charge, the operator may select a batch of mail items in which the mail item is to be included and the operator may select a date on which the batch of mail is intended to be delivered to the postal authority. To select batch of mail in which the mail item is to be included, the operator points to postal data item 43 of which the four most significant characters identify the batch and the less significant digits comprise a mail item number. Pointing to the postal data item 43 causes the mail preparation program to display a drop down menu of existing batch identifications or batch names. The operator can select an existing batch name from the menu or may select 'new' from the menu and the computer then allocates a new unique batch identification for a new batch of mail items. If desired the operator may choose and enter a name for the new batch of mail. To select a date for the mail different from the date displayed in the depiction of the postal indicium, the operator points to the postal data item 44 which is the date and a drop down menu comprising a calendar of dates is displayed to enable the operator to select a required date.

It will be appreciated that the amount of postage charge for a mail item may vary according to the destination of the mail item. For example in respect of mail items to be sent to states or to countries different from the state or

country of origin, either by surface mail or by airmail, the amount of postage charge may be dependent upon the destination state or country. Accordingly the classes of mail may include at least one class for destination
5 states or countries different from the state or country of origin. Upon selection of one of these classes by the operator either a drop down menu of names of destination states or destination countries from which the operator can make a selection. Alternatively a map may be
10 displayed and the operator points to a required destination or zone on the map. Selection of a destination then causes the mail preparation program to display a menu of postage charges corresponding to the selected destination.

15

When the data items displayed in the depiction of the postal indicium have values as required by the operator of the mail preparation system, the operator may effect an input to the computer indicating that the values of the
20 operator selectable postal data items are as required and accepting the postal indicium. The computer inputs the selected values of the operator selectable postal data items to the PSD and initiates the PSD to effect an accounting routine and to generate a postal indicium based
25 on these values. When the PSD has generated the postal indicium, the PSD outputs the postal indicium to the computer and the computer utilises the postal indicium received from the PSD to operate the printer 27 to produce an imprint of the generated postal indicium on the mail
30 item.

Thus it will be appreciated that the computer running the mail preparation program causes a depiction of a postal indicium to be displayed to an operator of the mail
35 preparation system and enables the operator to select and modify postal data items in the displayed depiction of the postal indicium whereby the operator sees a visual image

of a current state of a postal indicium that can be accepted for printing on a mail item.

The mail preparation system may be utilised by a mailer to
5 prepare mail items or batches of mail items each batch of
items having an identification and mail items within a
batch having an item count within the batch. If desired a
batch may be sub-divided into sub-batches of mail items
and, where the term batch is used herein, the term batch
10 is to be understood as including a batch or a sub-batch.
In handling a batch of mail items it is required that
messages pass between the mail preparation system of the
mailer and a postal authority that is to receive and
distribute a batch of mail.

15

The handling of a batch of mail items is effected in two
phases, the first phase known as an announcement phase
relates to preparation of a batch of mail items and is
followed by a second phase known as an induction phase
20 relating to handling of a completed batch of mail items by
the postal authority.

In the announcement phase, a 'pre-announcement message'
may be sent by the mailer to the postal authority
25 informing of intent by the mailer to prepare a batch of
mail. When a batch of mail has been prepared and
completed a 'full announcement message' comprising a
statement of mailing providing information relating to the
mail items contained in the batch is sent by the mailer to
30 the postal authority. During preparation of a batch of
mail it is possible that some items of mail may suffer
damage or may be otherwise spoilt and are withdrawn from
the batch of mail. Accordingly a further message referred
to as a 'modified announcement message' providing
35 information relating to modification of the batch of items
as a result of withdrawal of items is sent by the mailer
to the postal authority.

When a batch of mail has been completed and is ready for collection from the mailer or for delivery to the postal authority, the induction phase is initiated and an 'induction advised message' is sent to the postal authority. The 'induction advised message' informs the postal authority that an identified batch of mail is ready for collection from the mailer or for delivery to the postal authority.

10 When a message sent by the mailer is received by the postal authority, the postal authority sends back an acknowledgement of receipt of the message to the mailer whereby the mailer is assured that the information in that message has been received by the postal authority.

15

When the postal authority has collected the batch of mail, or the batch of mail has been delivered to the postal authority, and the batch of mail has been officially received by the postal authority, for example at a postal authority sorting depot, the postal authority sends an 'induction acceptance message' to the mailer informing that the batch of mail has been received by the postal authority. After receipt of the batch of mail, the postal authority may carry out checks on the batch of mail to ensure that the physical batch of mail items corresponds to a listing of mail items in the 'full announcement message' and, when the postal authority has checked the postal indicia on the mail items in the batch and is satisfied that the postal charge data meets the postal authority acceptance criteria, the postal authority sends an 'agreed message'.

Information relating to the mail items of each batch is held in the database 50 of the computer 18 and the information in the database is utilised in generation of the messages described hereinbefore and sent by the mailer

to the postal authority.

It will appreciated that a number of different batches of mail may be at different stages in the announcement and induction phases and it is desirable to be able easily to determine the stage reached by any batch and to check that there has not been a failure in communication of any of the messages.

10 Accordingly, when required by the operator, the computer
18 running the mail preparation program is arranged to
display a message status screen as shown in Figure 6. The
message status screen is tabular in form having a
plurality of cells arranged in columns relating
15 respectively to each of the messages described
hereinbefore and in rows relating respectively to each
batch of mail. Each column is provided with a column
title identifying the message to which the column relates
and each row is provided with a row title identifying a
20 mailing name assigned to a batch of mail. The cells of
the message status screen normally have a background
colour, for example white, and when a message has been
sent a cell corresponding to that message and to a batch
in respect of which the message has been sent is caused to
25 assume a selected different colour, the selected colour
being indicative of the status of that message.

When a message is sent by the mailer to the postal
authority in respect of a batch of mail the cell
30 corresponding to that message and that batch is caused to
assume a first colour, for example green. When an
acknowledgement of receipt of that message by the postal
authority is received by the mailer from the postal
authority the cell is caused to assume a second colour,
35 for example blue. Preferably a time-out procedure is
operated by the computer whereby, after sending a message
from the mailer, if an acknowledgement of that message has

not been received from the postal authority, or the postal authority has not agreed the message, within a predetermined time period the cell corresponding to that message is caused to assume a third colour, for example
5 red.

Accordingly an operator of the mail preparation system is enabled easily to determine the progress of the batches of mail by noting the colour of each cell in a row of cells
10 relating to any selected batch of mail and to determine if there has been a failure in communication or agreement in respect of any message relating to any of the batches.

As shown in Figure 6, the screen also includes columns of
15 cells relating to receipt of messages from the postal authority, that is to say the 'acknowledgment induction message', the 'accepted induction message' and the 'agreed message'. It will be appreciated it is only necessary to indicate that these messages have been received and hence
20 cells relating to these messages received from the postal authority are either background colour, when no message has been received, or a different predetermined colour, for example blue, when the message has been received. Thus initially in respect of a batch of mail which is
25 intended to be prepared but which has not been completed the cell relating to the 'pre-announcement message' will be green and then turn blue when an acknowledgement of the 'pre-announcement message' has been received. As the preparation and handling of the batch of mail proceeds the
30 cells in the row relating to a batch of mail progressively become blue. Accordingly if all the cells of a row relating to a batch are blue the operator can easily see that the batch has been successfully prepared, received by the postal authority and fully accepted by the postal
35 authority. If any cell is red, the operator is alerted that there has been a failure in a communication with the postal authority. Also the colour of cells in any row of

cells provides an indication to the operator of the status of the mailing preparation.

If the display 24 is monochrome, the status of messages
5 associated with the cells may be indicated by different
grey scale shades or by different hatching of the cells to
enable the status of messages indicated by the respective
cells to be distinguished and recognised by the operator.

10

15

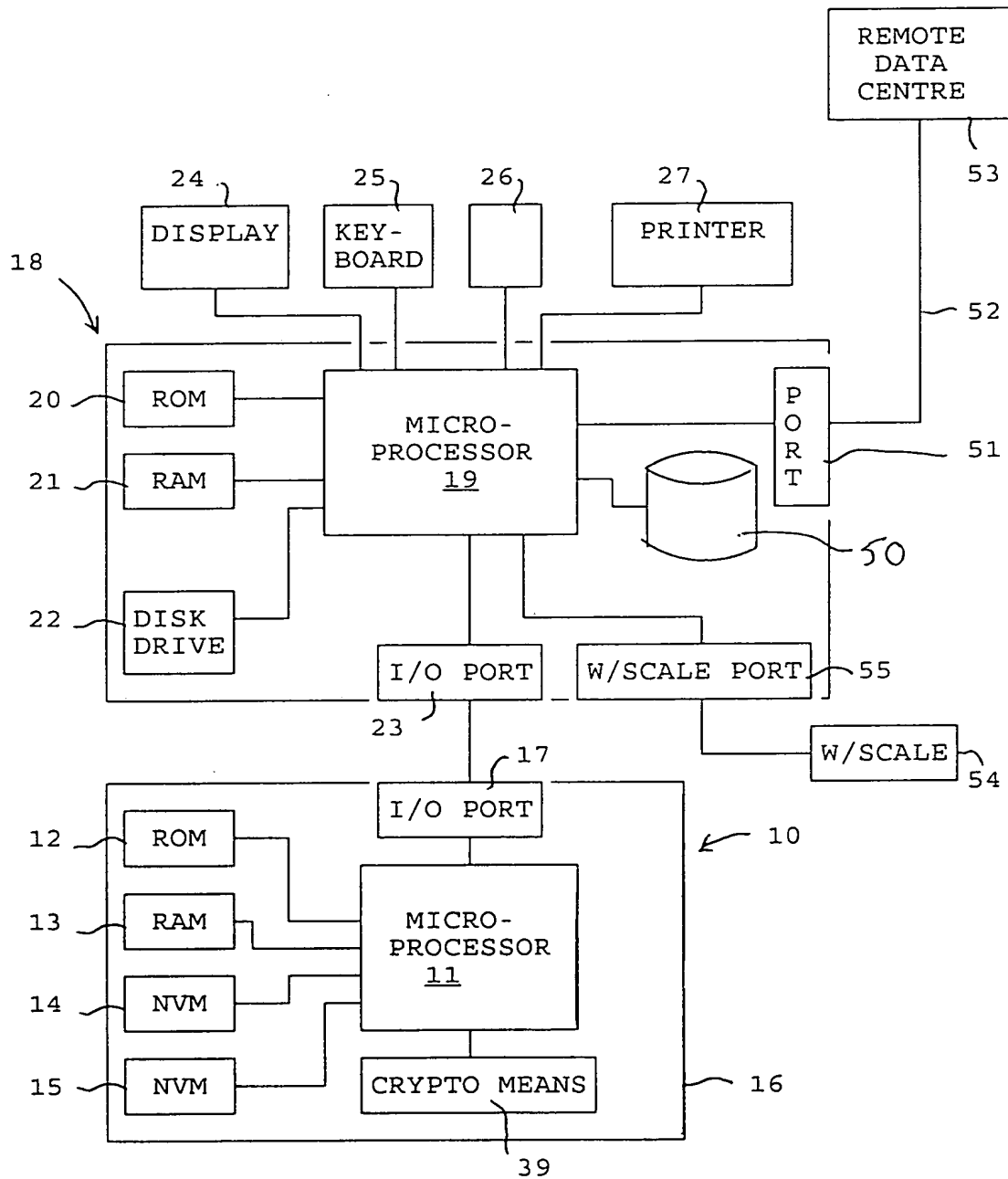
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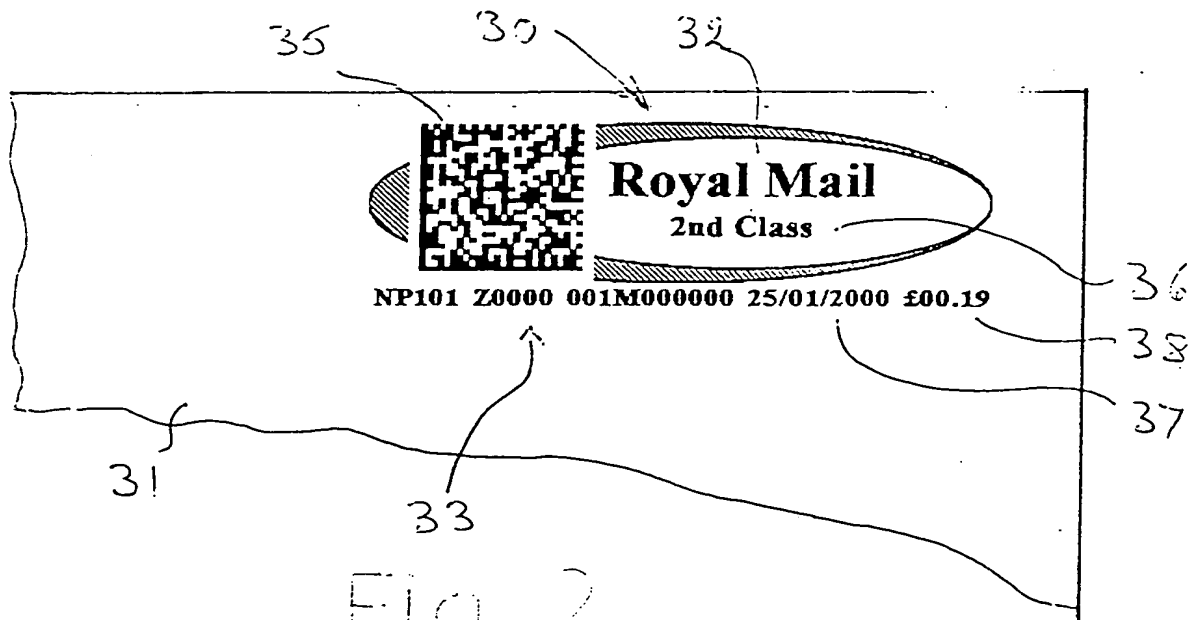


Fig 2

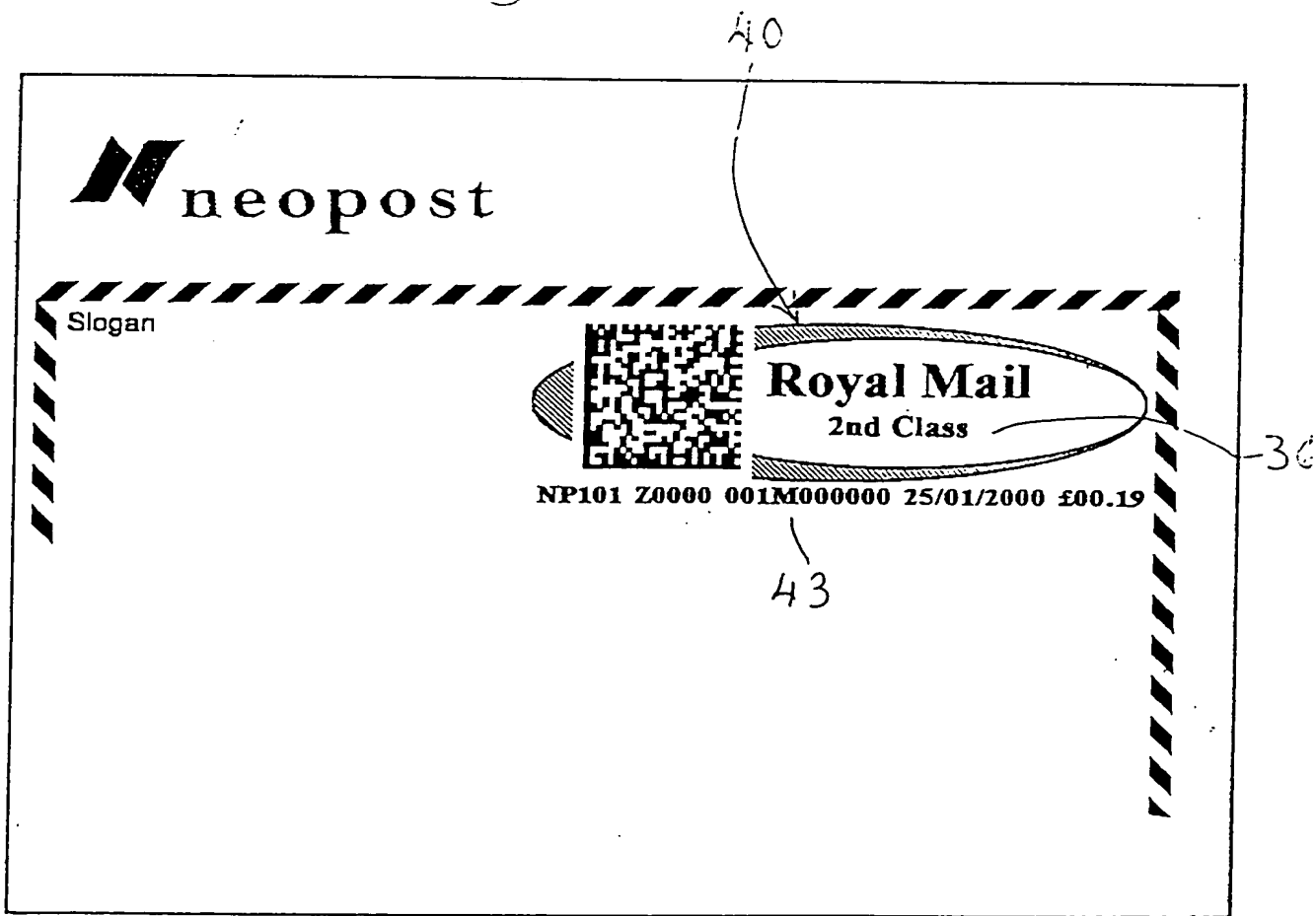


Fig 3



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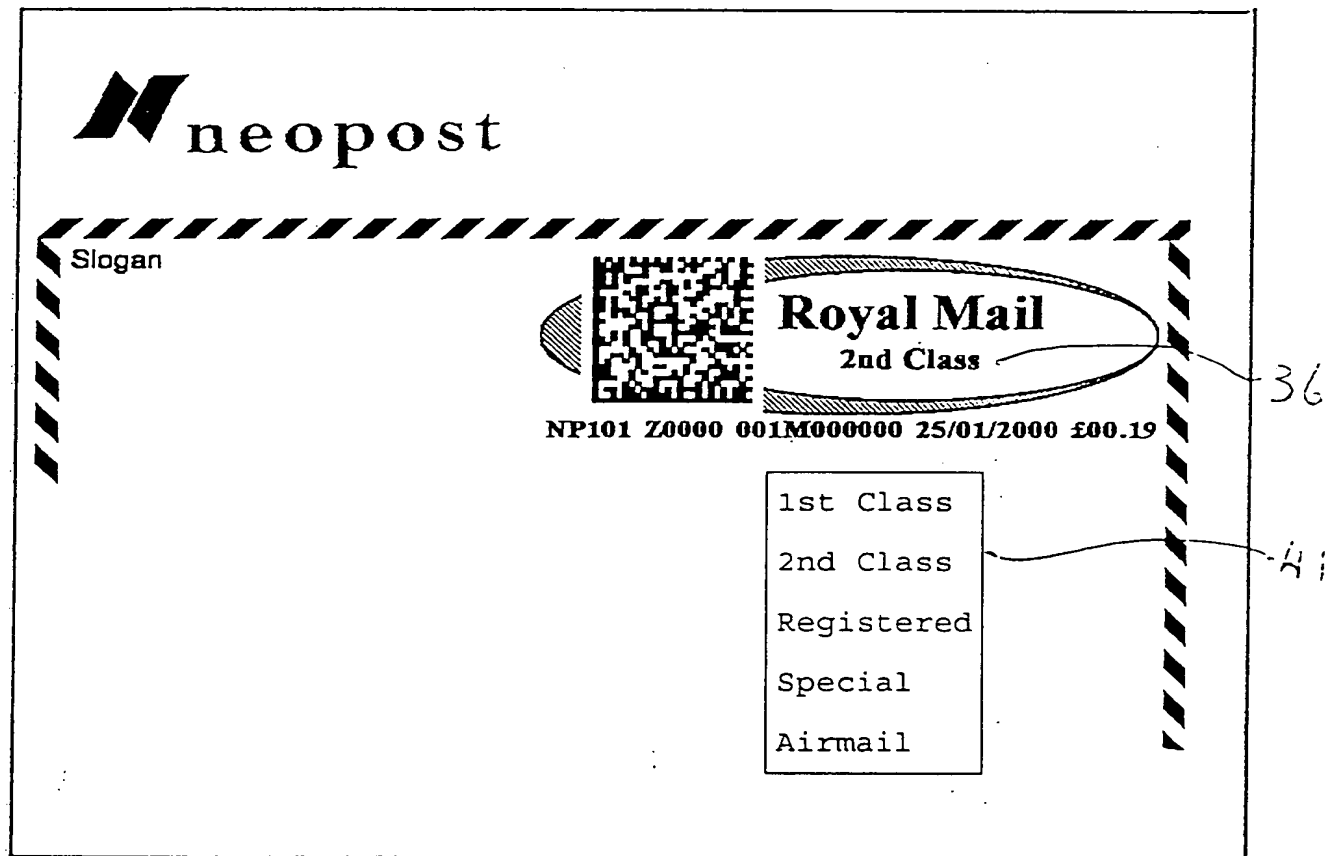


Fig 4



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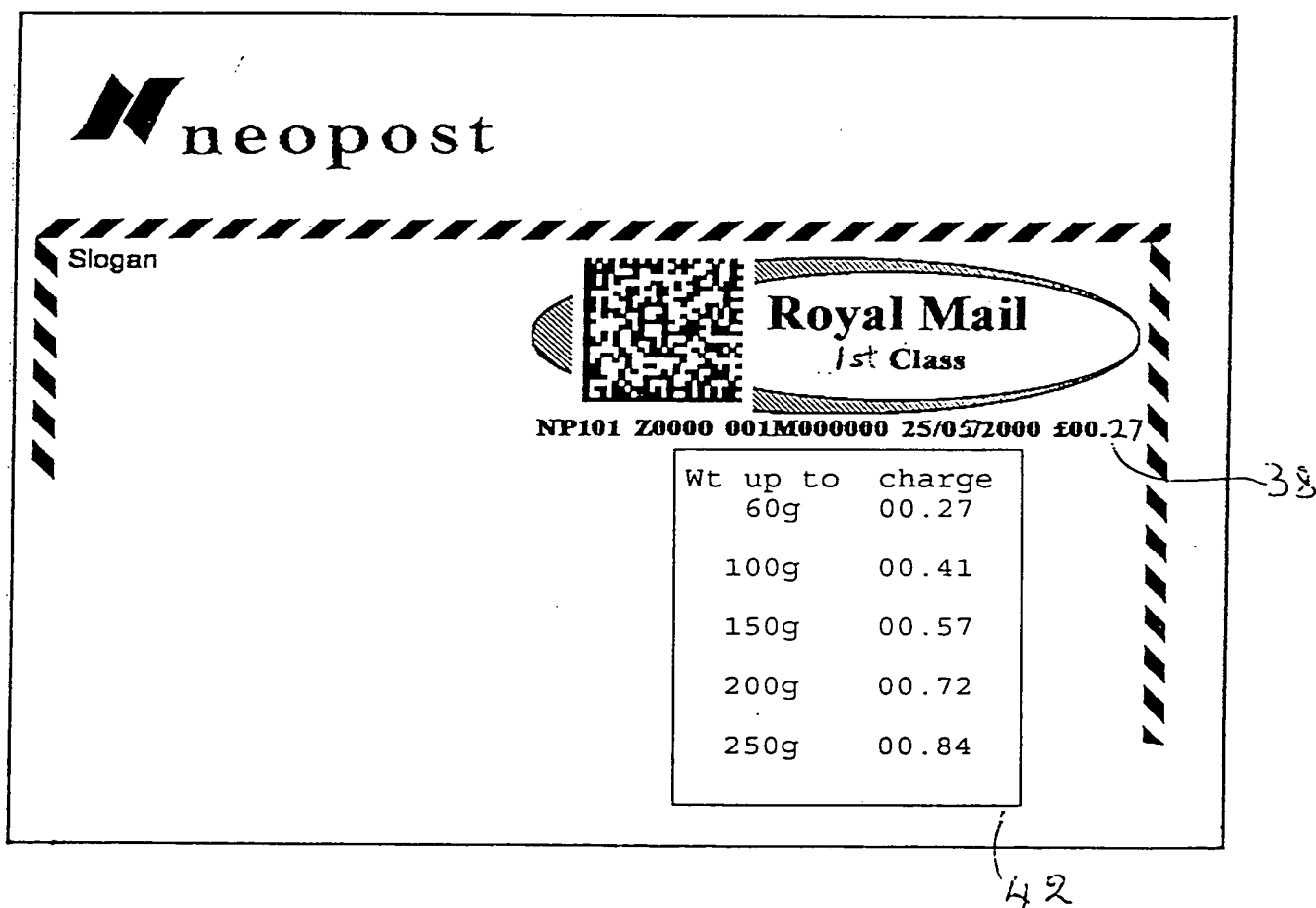


Fig 5



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Mailing name	Announcement			Induction			
	Pre	Full	Mod	Adv	Akn	Acc	Agr
Neopost 27/03/00							
Neopost 26/03/00							
Neopost 19/03/00							

Fig 6



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